



H.E.F. CANADA QUARTERLY

The Human Ecology Foundation of Canada

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CONTENTS

President's Message; Darlene Koski	page 1
Editorial Comment	page 1
<u>Looking Back</u> - The Relationship of Human Ecology to Chronic Human Disease	page 3
<u>Allergy Workshop</u> - Diagnosing Food Allergies	page 7
<u>News Reviews</u>	page 12
<u>Ecological Illness And The Law</u> ; Earon S. Davis, J.D., M.P.H.	page 17
<u>The Patient's Perspective</u> ; A Letter From A Mother	page 26
<u>Everything You Ever Wanted To Know</u> - What Is Acrylic, and Why Do They Call It A Miracle Fiber	page 28
<u>Know Your Body</u> - Neuroendocrinology For Beginners	page 31
<u>Something To Think About</u>	page 36
<u>Industrial Products</u> - Physiology Notes	page 37
<u>An Introduction To Organophosphate Pesticides</u> ; Douglas J. Steinke, BSc (Envirochem)	page 38
<u>Coming Up In The Next Edition</u> - A Preview	page 41

H.E.F. Quarterly Editor

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THE HUMAN ECOLOGY FOUNDATION OF CANADA

The H.E.F. Canada Quarterly

The HEF Canada Quarterly is a publication of The Human Ecology Foundation of Canada, a charitable organization under Canadian Law, operating on a non-profit basis. The Quarterly is for people who are interested in health and its relation to our environment. It deals primarily with research in the field of clinical ecology (environmental medicine), and also describes how people have improved their health by changes in habits, diet, and environment. As such, it does not offer medical advice, and we urge persons wishing to experiment with changes in their lifestyle to do so with the help and guidance of a knowledgeable physician.

The Human Ecology Foundation of Canada

One of the purposes of the Human Ecology Foundation is to promote the free exchange of information on the prevention and treatment of ecological illness. People who are ecologically ill are no longer able to adapt well to common and increasing exposures in their everyday environment. They may develop a variety of chronic or acute symptoms that are brought on by substances in the air, in food, or in water.

Natural inhalants such as pollens, dust and moulds, and even natural foods may begin to affect people adversely. This aspect of the condition is often referred to as "allergy", but the many synthetic chemicals that are now common around us can also cause symptoms, and overexposure to these can trigger ecological illness even in those with no history of allergy or other sensitivity to the environment. Symptoms may be mild and merely annoying, or they may become severe enough to interfere with a person's daily activities, family life, and career.

On a local basis, HEF Branches work toward finding sources of chemically less-contaminated food, water, clothing, and household furnishings, as well as providing counselling on changes of lifestyle that may alleviate symptoms. The Foundation and all its branches would like to encourage others to become involved not only in research on the effects of environment on health, but in working toward a healthier, less-polluted environment.

Subscription and Membership

Membership in the Foundation includes a subscription to the HEF Canada Quarterly which is produced four times per year. Annual membership and subscription fee is \$ 20.00. WE WANT NEW MEMBERS!

P R E S I D E N T ' S M E S S A G E

Greetings to all Fellow Members of H.E.F. Canada!

A warm welcome is extended to Mary Merlin Nelson, our new editor of the HEF Quarterly. It is not often that people volunteer to take on an enormous task, but that is what happened - Mary actually volunteered. I am sure we will all be encouraged by her enthusiasm, dedication, skill and knowledge.

Tasks are always completed more easily when help is offered; Members, send in your contributions.

An exciting event is being planned for April 13 - a fund raising evening, a full day medical symposium for doctors, nurses and technicians, and an evening for the general public. Our three key speakers are Dr. W. Rea from Dallas, Texas; Dr. S. Baker from New Haven Connecticut and Dr. J. Waickman from Ohio.

See the enclosed flyer for specific details.

In closing, I would like to thank those who sent in briefs, etc. to the committee investigating the problems involved with environmental illness, and encourage others to get involved. It's never too late. Consult your January newsletter for the details.

Ecologically yours,

Darlene Koski

Darlene Koski,

President,

The Human Ecology Foundation of Canada.

E D I T O R I A L C O M M E N T

I Am An Endangered Species! I Am Not Alone! We are all victims of the 20th Century Disease, known variously as ecologic(al) illness, environmental illness, chemical and cerebral allergy, immunotoxic syndrome, bioecologic illness, total allergy syndrome, immune system dysregulation and "illness of unknown etiology".

In the 5 $\frac{1}{2}$ years since I was first diagnosed "allergic" and began treatment in an allergy clinic familiar with clinical ecology techniques, my life has been changed completely. Part of that change came about as a direct result of what I've learned as a member of the Human Ecology Foundation of Canada, and the HEF Quarterly.

As your new editor, I hope to repay the debt I owe to the editors who came before me; to the clinical ecologists (both here and in the rest of our ecologically threatened world) who have taught me, through written words, much of what I needed to know to cope with my illness and its devastating ramifications, and help to heal the damage done by decades of misdiagnosis; to the ecologically ill who form support systems that continue to sustain me, and others like me, while we all fight for the recognition of our illness, and the validity of its diagnosis and treatment; to Dr. John G. MacLennan, Dr. William J. Rea, Dr. Theron Randolph, Dr. Richard Mackarness, and others too numerous to mention.

I've never been a journalist or editor of the printed word, but having spent the years from 1968 to 1980 in the wonderful world of private and public radio, I have some experience in linking lines of communication from one part of the continent to another; all you have to do is listen, tune in, get involved! It's time for us to stand up and be counted!

KNOWLEDGE is the only weapon we have; ongoing research in the field of clinical ecology and environmental medicine, gives us HOPE. We are "our brother's keeper"; what affects us, will ultimately affect everyone. We are windows on the world; environmental indicators speaking out in growing numbers. Our voices must not be silenced or ignored.

I hope to hear from many voices out there; patients, physicians, nurses, lab technicians, researchers, toxicologists, human ecologists; medicine, science and pharmacy students and teachers, lawyers; people from all walks of life and all age groups; allergic and non-allergic. Share what you know! Tell a friend or colleague about H&E Canada; send someone a gift membership; spread the word!

Submissions to the H&E Canada Quarterly may be sent to:

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Deadline Dates are April 19th (June Edition), July 19 (September Edition) and October 18 (December Edition), but we'll try to be flexible. If you miss one, there is always another, so no excuses! Whether you have Questions or Answers, we'd like to hear from you. This is OUR Quarterly, our communications line to each other. We are all responsible for its maintenance.

Remember: It Takes Both Sun And Rain To Make A Rainbow! Stay (at)tuned!

Editor's Note: Often, while reading through back issues of our HCF (Canada Quarterly, I rediscover articles of particular interest which warrant another look. The HCF Ottawa Branch's 'New Member's Kit' contains one that has been consistently thought-provoking. The original article has been edited and condensed for review in this issue.

The Relationship of Human Ecology to Chronic Human Disease

It is important to realize that man's symptomatology and illnesses can be the reflection of the sum total adverse response of the body to a variety of exposures in our environment. It is rare to find a person with a long history of chronic symptoms who is susceptible or sensitive to only a single substance. We usually find that the longer the duration of the disease state, in association with a strong family history of specific sensitivities, that many different causes can produce a wide variety of symptoms in different organs of the body.

We have come to accept the idea that mental or cerebral symptoms have a psychiatric or psychologic origin alone; all colds are caused by infection; hay fever is caused by pollens or mold spore sensitivities, and so on. However, when a hayfever sufferer also complains of migraine headaches and chronic stomachache complaints, these symptoms are not usually considered to be related.

Many cerebral and somatic symptoms which defy our diagnostic efforts on which are associated with negative lab tests are considered to be emotional in origin and are discarded into the wastebasket of 'nerves'. These patients are managed accordingly, with symptomatic medication such as tranquilizers, sedatives, vitamins and psychiatric therapy. Chronic fatigue of unknown cause is likewise always classified as nervous in origin.

Much of man's chronic symptomatology is caused by maladaptation and increased susceptibility to environmental exposures. Many bizarre, unusual and unexpected reactions can occur. Not all that wheezes is asthma, nor is all chronic symptomatology caused by ecologic maladaptation or hypersensitivity. We must keep an open mind and be aware of the fact that many different causes may be related to chronic disease, including psychogenic maladaptation. (Clinical ecology is the diagnosis and treatment of man's symptoms resulting from physical and mental maladaptation or adverse reaction to environmental stressors.)

Whether man reacts adversely to various factors in his environment depends on the degree of susceptibility. The degree and extent of susceptibility will

determine how sick the individual may become. In addition to hereditary factors, the development of susceptibility usually depends on the frequency and amount of exposure.

Since the Industrial Revolution, and particularly in the last 50 years, we have progressively changed from an agricultural to an industrial society, with its associated progressive increase in exposure to a chemical environment. Increased urbanization has moved man from a clean ambient atmosphere in the country, to one of increased pollution caused by industry, increased numbers of automobiles, increased use of fossil fuels in our homes, buildings and factories. Much of our household furnishings as well as our personal attire is of synthetic origin and derived from fossil fuels. Increased exposure to chemicals has occurred in our diet from food additives and preservatives, colours, synthetic foods, dyes, etc.

The manifestation of ecologic disease may be reflected in any organ system of the body. The severity of reaction and the variation and number of symptoms exhibited will depend on the degree of susceptibility present in the individual. The reactions may be transient and intermittent at first, but as the insult or exposure continues over a long period of time, the symptoms become chronic and constant in nature, and progressively involve more organ systems.

The following is a list of some of the commoner central nervous system reactions that we encounter daily in our practise of clinical ecology, either as presenting complaints or as a result of confirmatory testing in our offices: migraneous headaches; mental confusion associated with lack of cerebration, lack of concentration and poor memory; sleepiness, mental foggiess, insomnia, restlessness, nightmares, sleepwalking and sleeptalking; double vision as well as blurred vision is frequently encountered; tenseness, jitteriness, weeping and laughing for no particular reason may also be seen; unconsciousness, convulsions or blackouts.

Hyperactive and hypertonic infant or child are commonly heard descriptive terms. Children frequently show aggressiveness, quarrelsomeness, irritability, stubbornness, irascibility, belligerence. Of course learning disability and what appears to be retardation are other parts of the psychologic spectrum. We see many examples of depression in varying degrees, manic-depressive behaviour, and even paranoia. We must also not forget that physical incidents related to the delivery of a baby may cause chronic symptoms such as birth injury, anoxia, etc.

Central nervous system reactions can be caused by a wide variety of different factors, including various inhalents, foods and chemicals. If the disease is of a long-standing nature, it is usual to find multiple sensitivities affecting multiple shock organ systems. All of the important causative factors are usually found in

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Central nervous system reactions can be caused by a wide variety of different factors, including various inhalents, foods and chemicals. If the disease is of a long-standing nature, it is usual to find multiple sensitivities affecting multiple shock organ systems. All of the important causative factors are usually found in

our immediate environment. With regard to the chemicals, we find that the common everyday exposures include all the synthetic materials in our homes, such as sponge rubber, synthetic rugs, fibreglass curtains, all the cleaning agents and sprays, chlorine and fluorides in the water, and heating systems that use fossil fuels.

It can be postulated that the hypersensitivity reaction affects the endocrine system, including the pancreas and possibly the adrenal and thyroid glands. The symptoms produced by this reaction include nervousness, fainting, emotional disturbances, excessive perspiration, chilliness, hunger and craving for foods, particularly sweets; anxiety, tremors, headache, chronic fatigue, weakness, lack of concentration and poor memory, disorientation, mental confusion, blurred or double vision, chronic depression and muscular incoordination. It may be very difficult to reach a specific diagnosis when the symptomatology is very complex, and several organ systems are involved in the reaction.

Multiple unlikely etiologic factors may be involved in producing bizarre and what might be considered unbelievable reactions. This is probably why so much of the vague, chronic symptomatology is considered to be psychosomatic in origin when no laboratory or other test findings can be found to support the diagnosis of organic disease. A careful, detailed history is the most important tool in our possession in reaching a diagnosis of ecologic illness. The stronger the family history of an allergic tendency, the more likely it is that the presenting complaints are allergic in origin.

When the disease state has been present for many years, the history will frequently reveal a progression of events from a simple onset of a single organ response such as eczema or gastroenteritis. The original symptoms may subside or disappear, either spontaneously or as a result of therapy, and be followed by succeeding or accumulating symptomatology. The majority of individuals who have had eczema during infancy will develop respiratory allergies before they are ten, and about half of these will develop asthma eventually, as sensitivities develop. Over the years, rheumatic, urologic, gastrointestinal, dermatitis, etc. symptoms may appear.

In the field of clinical ecology we are dealing with a very special situation where the individual with a susceptible constitution has the ability to develop sensitivities throughout his or her lifetime, provided the proper environment exists. This environment usually consists of dosage and frequency of exposure, but these are also affected by the stresses of our lives, and this stress may include the emotional variety, fatigue, and other forces, all playing a part in

the production of future ill health.

The management of the chemically susceptible individual is probably the most difficult and complex of any part of the field of clinical ecology. Inhalants and foods may be avoided or treated, but the avoidance of chemical exposures is so extensive and complicated that it presents a very stiff challenge indeed. The deciding factor as to how much has to be done, and how soon, depends entirely on the degree of chemical susceptibility in the individual. If the patient is highly sensitive and therefore very sick, then more drastic, energetic and immediate measures are necessary in order to reduce the exposure of the patient, and thus return him more rapidly to good health.

Certain principles are instituted immediately. As much as possible, all synthetic fabrics in the house are removed or stored away, and this includes personal apparel. Any replacement fabrics or materials are made of natural fibres, that is, silk, cotton, wool and linen. It is essential to avoid the use of drugs, as well as most cosmetics, particularly those of a spray, and highly scented varieties. Instead of using the proprietary dental toothpaste, a good powder can be made from equal parts of baking soda and sea salt. Usually ordinary soap flakes, washing soda, borax and bon ami can replace the common cleaning agents found in the house.

In exquisitely sensitive individuals it may be necessary for them to change the geographical location of their homes from the city to a more rural area, where their exposure to environmental ambient air pollution will be considerably less. There have been several instances where patients have moved outside the city, and have been able to live a very normal life as a result of this move.

(Special thanks and KUDOS to the Ottawa Branch for providing new members with such an excellent Beginner's Guide To The Allergic Galaxy! Their 'General Instructions' lists provide immediate assistance to the newly diagnosed.)

ALLERGY WORKSHOP

Editor's Note: If I had a Fairy Godmother who would grant me two wishes for every ecologically ill person in the world, I would ask for simple things: A Sense Of Humour. A Curious Mind. Not necessarily in that order. My father used to rage that "The chemical companies rule the world!", but I didn't believe him. Then television, radio, and the journalistic media enticed me to "Live Better Chemically", and proved the case for that way of thinking with easy-care clothing that didn't shrink or tear; sheets and pillow cases I'd never have to iron; textures and colourfast rainbow hues, and soft fake furs and velvets to wear, sleep in, and sit in; indulge my taste for inexpensive but elegant fashions for business, in. Polyester didn't crease like silk did, and was machine washable. Of all my knits, only orlon/acrylic didn't shrink or go out of shape. My creased cottons were replaced by polycotton blends that required little thought or special attention. Stains on my furniture were ended by Scotch-guarding. It wasn't only fabrics that were changing. There was no such thing as stale bread anymore. You could keep milk for days, even weeks, without it going sour. Cheese and meat stayed the right colour and texture even if you left them out marinating all day in that marvellous pre-mixed marinade you found at the corner grocery store. Shelf Life became a phrase consumers were comfortable with. Peanut butter didn't go rancid anymore. 'Accent' and 'MSG' improved the flavour of foods. Consumers were overjoyed! If our foods had been labelled in those magic days of discovery, we probably wouldn't have read the list of ingredients anyway. If someone had told us that embalming fluid had moved from the undertaker's parlour into our living rooms, we probably wouldn't have believed it. If we had known that cyanide, cuprous chloride (acid) or hydrogen cyanide were being used to transform a colourless, flammable, poisonous liquid into fabrics we would wear next to our skin (and absorb through our pores), it still might not have made a difference. It doesn't seem to now. Those days are gone for those of us who have become what Dr. Richard Mackarness calls "Chemical Victims". We do not live better chemically! We cannot, and must not! Beginning with this issue, The H&F Canada Quarterly hopes to create a mini-workshop wherein "recovering" patients provide help for the "newly-diagnosed". All submissions are welcome.

Diagnosing Food Allergies

by Mary Merlin Nelson

The initial stages of allergy diagnosis are difficult, to say the least. I know the overwhelming confusion, frustration and intimidation the newly-diagnosed

allergic patient feels, because I've been there.

First, the inhalents are tested, because you've been feeling "out of sorts"; your nose is plugged, your throat is scratchy, your eyes are red and irritated. Your voice is hoarse. Your brain isn't functioning. You're miserable.

Not only are you miserable, but you've been fighting a cold for weeks, and your poor, tired body has just about run out of steam.

You keep forgetting things. Your life's in turmoil. You're getting sad, and depressed more and more often. Worst of all, you really don't believe there is such a thing as allergies. No-one you know has any. Oh sure, there's hay-fever, but you get that every year, and this year is different, harder to handle.

Your physician has told you there must be asthma in your family somewhere, and you remember the story of poor uncle so-and-so, who couldn't even go out of doors, it got so bad. He moved to the desert, and got much better.

You look down at your arm. Each of the little squares, cross-hatched and numbered and poked with those darn needles, has a welt in it. Big ones, small ones, itchy ones. Your arm hurts, and all the nurse is doing is measuring the lumps, and writing mysterious things on all those sheets of paper in front of her. Once in a while she asks how you're feeling, but you don't answer; she wouldn't understand or believe it anyway. You wait.

You're impatient to get it over with; there's a dull pounding in your head, and you're sure you're going to cry in a minute. Your doctor smiles at you, and says: "I guess you don't go outside much. You're allergic to pollen, trees, grass, grain, (hayfever, I knew that) and ragweed. You're allergic to dust and mould, and fungus. (Dust! I'm a good housekeeper, what do you mean, dust?) You're allergic to yeast. (I had a 'yeast infection' once. My mother uses yeast when she bakes. Allergic to yeast?)

The nurse isn't paying attention to you; she's still busy making circles around words on that page of single-spaced manuscript paper in front of her. She smiles, and hands you your first indication of what you're up against.

Your eyes glaze over. You try to read, but your eyes are blurry. You don't want to believe what your eyes and ears are telling you.

"Yeast Allergy is relatively common. Avoidance of contact, whether by inhaling or ingesting, is strongly suggested. A series of injections to desensitize the patient is indicated."

The circles bring a series of offending foods to your immediate attention: Bread, rolls, cakes, cookies, pretzels, mayonnaise? Vinegar, malt, beer and wine. Anything fermented. Cheese, mushrooms, milk fortified with vitamins.

Vitamins? Thiamin, niacin, riboflavin. Anything enriched. You know you're going to cry! No more cottage cheese, yogurt or buttermilk; no sour cream or soy sauce; no ketchup or pickles, or salad dressing; no tomato sauce or chili peppers. Wait a minute! No mince pie, whisky, wine, brandy, gin, rum, vodka, rootbeer, gingerale; no Pepsi/Coke tests; the list is endless and impossible to comprehend.

"Substances that are derived from yeast or have their source from yeast include most vitamins, and powdered or skim milk." You are further frightened by reading: "Antibiotics: penicillin, mycin drugs, chloromycetin, B12, tetracyclines and any others derived from mould cultures or a primary yeast base" are to be avoided. Yeast, mould and fungus are all related, you discover.

"What if I get sick?", you groan. You're discouraged. In a world of milk and honey, you're allergic to both. "Why Me?" Why not you. Convinced you are facing an impossible situation (she must be kidding); the total upheaval of your eating habits; the jeers and laughter of your family and friends; you very reluctantly look at all the other things she's put in front of you.

No coffee. No nuts or chocolate. No popcorn. No peanuts or peanut butter. Impossible! You know why you're here, and you probably should be listening to what she's telling you. You know it will be important later, but somehow you're not ready to hear anymore. How will you explain it to your anxious family?

You're looking at the other lists she's handed you. Ridiculous! Corn. Wheat. Soybean. Are all your favourite foods going to be denied you? Not you!

You slip further into your familiar, tired depression; fantasizing the pale wraith-like, bony, starving shell you'll become if you really attempt to eliminate all those things. For a moment, all the necessary requirements of a balanced diet flash before your eyes. What about your kid's meals. Cook it but don't eat it, right? What do you mean don't even breathe it? I've always eaten that; it's an old family recipe.

On your way out the door you mutter "Furthermore, I will not give up my hot morning coffee or my comforting evening tea!" You fold up all the sheets of instructions and whatever-else-there-is; tuck it into your pocket or purse, and take the fastest route to the exit; not sure if you'll ever come back.

Somewhere in your memory is a mention of food-testing, but that's off in the future somewhere, and for now, you're having enough trouble with the yeast list! At this point in your diagnosis, it's all up to you. How sick are you? How much do you want to get well? Don't throw those lists out, read them.

Accept it. Think of it as a challenge. There is much to learn, and the

more quickly you learn, the more quickly you will be able to change your life for the better. Don't think about breaking habits. Don't think about what you must give up. Create and strengthen new habits, and anticipate the good health you will get in return. Restrictions are only minor rules and regulations. It's all in your point of view.

You are going to be amazed at how much better you feel once you understand and accept the fact that our environment and our food is making us sick, and we can change things for the improvement of our health, and the health of the world around us. Consider yourself a pioneer, setting out on a brand new adventure.

Rules And Regulations

Regulation Number One: Learn your food families. If potatoes give you hives or asthma, and tomatoes give you arthritis or headaches; the knowledge gained by knowing the other members of the Potato Family is important.

If your avocado plant makes you sneeze, and cinnamon toast gives you indigestion, you'll need to know that they, bay leaves and saffron all become one in the Laurel Family.

If beans give you gas, bean sprouts won't help you achieve good health, even if you sprout them yourself; especially if you've shown an intolerance to soybeans. The Legume Family is a particularly far-reaching one that includes navy, kidney, lima, pinto and string beans; soy beans/oil/flour; lecithin, lentil, green/winter and blackeyed peas; peanuts, peanut oil, peanut butter; jack and tonka beans, St. John's Bread, licorice, gum acacia, even carob. Soybean, or soybean oil used in processed meat, baking products, cheese products, and even as a base for oil-based products as remote as artist's oilpaint and tinned sardines; if you are sensitive to it, constitutes a major unsuspected food allergy (and inhalent allergy, in the case of oilpaints) relating to legumes. The same thing applies to lecithin, another legume. Surprised? I was too.

I was even more surprised by the Sunflower Family, after realizing that my high nutrient snack was aggravating my asthma. The family includes lettuce, chicory, dandelion, sunflower seeds/oil, endive, Jerusalem artichoke, tarragon, pyrethrum and ragweed.

(Coconuts and dates are related. Chocolate and cola are related. Watermelon and cucumber are related to zucchini. Asparagus and garlic are related. Mustard, radish and cauliflower are related. Regulation number one can be fun! Think of it as a biology lesson in self-improvement, necessarily intertwined with Rule Number One. There is only one regulation, and there is only one rule. Easy, hmmm?

Rule Number One: Always Read Labels. Even the smallest letters at the end of the list of ingredients can be important (or even life-saving) to an allergic consumer. Always read the small print. Take your glasses with you so you won't miss anything. Read the label one thorough time through, and then decide whether or not it's worth the trouble it will give you. (This applies not only to foods, but to fabrics as well!) Watch your total chemical intake! It's all cumulative; adding bit by bit to your overwhelmed "tolerance threshold".

Once you've mastered labels, and eliminated the obvious things like MSG, BHT, Hydrogenated Vegetable Oil, Shortning (contains one or more of soybean, cottonseed, etc.); peanuts/dextrose/vegetable monoglyceride (peanut butter); it's time to take a closer look at the products on your grocery shelf.

Take your time. Compare not only price, but content. The fewer the contents, the better. Don't try to figure out why you have to pay more for less.

At first, you may feel silly examining a bag of granola; after all, it's a "natural health food", and should be safe. Oat flakes, wheat flakes, brown sugar, vegetable oil (no mention of what kind), raisens or dates (dried fruits are on your yeast list), barley flakes, millet flakes, honey, coconut, vanilla and salt. Hmm. Not for me, thanks. I'll make my own.

Once you've come this far, the rest is easy. You may even begin to see humour in labels that read: Natural, No Additives, Hypoallergenic, Non-Allergic Fiber Fill, and the like.

Warning! One who is suddenly healthier than s/he's been in years is quite likely to start preaching the word that New Habits Are Rewarding! Always be prepared for the fact that not all your friends appreciate being told they are slowly poisoning themselves to death.

Now that you've accepted the far-reaching implications of "multiple complex allergies" pertaining to inhalents and foods, it's time to start keeping a "diet diary". Nothing fancy; a sheet of paper and a pencil on the table near your after-dinner easy chair will suffice. Write down anything "strange" that happens to you, and the time it occurs. Don't ignore anything that occurs in your body, or any change in your mood. Take your clothing and environment into account. Make notes about the weather (often high or low pressure systems, wind or humidity can make a difference in how your body adapts).

Recommended reading: 'Dr. Mandell's 5 Day Allergy Relief System', and 'Not All In The Mind' by Dr. Richard Mackarness; both contain charts, diagrams, and general information that you will find most helpful at this time. Think Positive Thoughts.

Editor's Note: The most informative news releases are often found in the back pages of newspapers in far-flung areas of the country; mailed from one person to another; kept yellowing and dog-eared between the pages of a favourite book. In smaller cities and towns, these items may not be seen at all ... more's the pity. Your H&E Canada Quarterly would welcome any and all news clippings important to the ecologically ill. They need not be current, only worthy of sharing. The more we know about chemical allergies, pesticides, "sick buildings" and integral research; the more we are able to help ourselves and each other. Please date and identify the source of your submissions.

This arrived with a note that read "And they thought you were joking!" Dated May 3, 1981, it appeared in the Gazette/Journal in Reno, Nevada. An unidentified reporter quoted Dr. Alan S. Levin; an allergist, immunologist and adjunct professor of dermatology at the University of California in Berkley. "Are We Becoming Allergic To The 20th Century?"

"The increased use of petrochemicals has created disease states which result in depression, lack of motivation, increased irritability, and these factors would then lead to reduced productivity, financial stress, and even crime. Petrochemicals upset the body's disease fighting mechanism, making people allergic to such things as telephones, synthetic rugs, building materials, car upholstery, and other substances, including pesticides and herbicides."

"While heredity and other factors play a role in a person's susceptibility to allergies, petrochemicals can poison cells that control the disease fighting cells of the body's immune system. Lacking control, those cells continue to work even when they don't have to, resulting in an unusual susceptibility to allergies to anything from pollen to polyester. Much of the so-called stress of the 20th Century is not caused by lifestyle, but by exposures to chemicals which reduce the ability to cope with stress."

"Most often", Dr. Levin said, "the target of the disease is the brain, resulting in such symptoms as depression, confusion, forgetfulness or even schizophrenia. I want to make clear I'm not saying this is the sole cause, but this is one factor to be considered in what's going on in our society today. In extreme cases people can become 'universal reactors'. They develop allergies to just about everything, a condition which indicates the body's disease fighting capability has been profoundly reduced."

In the December 31, 1984 edition of the Toronto Globe and Mail, reporter Dorothy Lipoverko quoted Dr. Edward Napke; head of the federal Government's Adverse Drug Reaction program, which received 7,000 reports (made voluntarily by physicians and hospitals) of adverse drug reactions in 1984.

"Coloring, Additives In Drugs Suspected As Hidden Hazards"

"We must make everyone aware that there is no safe chemical. Somebody, someplace will react to something," warns Dr. Napke. "It's a big problem. There is so little data on product information (on allergies caused by additives or excipients) that we don't know who is most vulnerable, and most of the reports have no idea of what the excipients (a pharmacologically inert, adhesive substance such as gum arabic, honey or syrup used to bind the contents of a pill or tablet) are."

In the December 8, 1984 edition of the Winnipeg Free Press, reporter John McManus quotes Dr. Peter Warner, Manitoba's director of environmental health, and refers to a study done for Canada Mortgage and Housing Corporation by Energy Pathways Inc., an Ottawa consulting firm.

"Indoor Pollution Explored"

"Everything has a toxic potential for some persons if contaminants collide in the right combination. We know little about indoor pollution and broadening our scientific research with a possible emphasis on epidemiology and computer help may find some answers. A federal-provincial committee now set up recognizes there are problems, and this is going in the right direction."

The CMHC study identifies carbon monoxide, radon, nitrogen oxides, sulphur dioxide, ozone, asbestos, tobacco smoke, formaldehyde, carbon dioxide, house dust, fungi/mould, bacteria/viruses, aerosols, particulates, pesticides, ammonia, chlorine and organic vapors as "enemies in the home and workplace".

Back in July of 1984, the CP Wire Service reported Les Terrasses de la Chaudiere, a federal government building in Hull, Quebec, had 5,300 public servants who weren't "hallucinating when they complain that working in the office tower gives them everything from headaches and dizzy spells to stomach nausea and irritated skin" but were "baffled by the cause of the problem and uncertain how to solve it". Dr. J. Corbett McDonald of McGill University, who headed an investigation into the "sick building", said it was a "classical example of the phenomenon, 'sick building syndrome' cropping up in a growing number of modern office structures." His report said "One group of investigators has speculated that a mixture of

pollutants, catalyzed by ultraviolet light to form a photochemical smog, may cause the varied non-specific health complaints associated with these 'sick building' outbreaks", but added "there is no supporting evidence for this hypothesis and no obvious way of testing it." The Ottawa Bureau of the Globe and Mail had an excellent article on Les Terrasses de la "Shoddy Air" in their edition of December 11, 1982.

A "Drug Alert Issued" in June of 1984 linked a papaya-based spinal drug with cerebral hemorrhage and other neurological changes, and reported 28 cases of reactions, including five deaths and several cases of paralysis. The drug is derived from the same active agent used in some meat tenderizers.

Sequential newsclippings:

Winnipeg Free Press, May 1983 - Contraceptive Okayed

A disposable one-size-fits-all polyurethane foam device which exudes spermicides was approved by the United States Food and Drug Administration as a non-prescription "over the counter" contraceptive for women.

The Winnipeg Sun, February 1984 - Deaths Linked To Contraceptives

Four cases of toxic shock syndrome were reported in women using contraceptive polyurethane foam devices. The cases occurred in late 1983, and physicians were warned "that a potential problem may exist". The national Centers for Disease Control said "Given the small number of known cases and the potential reporting biases, the risk of Toxic Shock Syndrome associated with contraceptive-sponge use remains uncertain." The manufacturer of the sponge downplayed the significance of the CDC findings. "Because the sponge is new, it is getting a lot more attention given to it."

Toxic Shock Syndrome is a disorder that occurs mainly in young women, particularly during or just after their menstrual periods. First reported in 1980, the disease is caused by a bacterium, *Staphylococcus aureus*. Most cases have been associated with the use of tampons.

Readers will remember Toxic Shock Syndrome was specifically linked to super-absorbant tampons, most of which consist of a cellulose product at their core, and a cover of polyester, (as do 'sanitary pads' and panty liners); something "synthetic fabric allergic" women should be aware of. Many women are bewildered by recurring "rashes, tenderness and/or irritation" during their menstrual cycles, and suspect it may be caused by the synthetic fabrics. The H&F Quarterly would welcome "feedback" on this delicate subject. Is any research being done on this?

Further to sequential clippings: often, all one needs to read is the headlines of news releases. Chilling evidence of how little we know about industrial products like pesticides came to light during December 1984 and January 1985, as the horror of Bhopal, India unfolded in our daily newspapers:

Dec. 8/84 - "Chilling after-effects strike gas survivors";

Dec. 11/84 - "Ailing Bhopal residents show delayed chemical effects";

"Gas leak brings on miscarriages, doctors say";

"Gas plant problems revealed".

Dec. 13/84 - "Bhopal compared to Three Mile Island";

"Pesticide to be made from gas";

"Relative of victims files suit in U.S.".

Dec. 17/84 - "Slum deserted as gas neutralized";

"Violations cost company \$55,000" (Charleston, West Virginia plant).

Dec. 27/84 - "Pesticides based on deadly chemical";

"Crop-killer tests hinted".

Dec. 31/84 - "Rejected chemical taken to Georgia" (rejected by Brazil).

"Indian state to sue company over gas leak".

Jan. 5/85 - "Water entering Bhopal tank probably caused gas disaster";

"Bhopal tragedy puts spotlight on chemical industry";

"Union Carbide negligence cited by Indian scientist".

Jan. 10/85 - "Bhopal probe finds unknown compound".

In January of 1985, another tragedy hit the papers:

Jan. 11/85 - "Poison gas leak forces hundreds out of homes"; (Stockholm, Sweden).

Jan. 12/85 - "Precautions questioned after gas leak".

Chemical toxicity is not a new issue:

Jan. 2/85 - "Love Canal victims bitter despite award";

Jan. 8/85 - "Agent Orange suit approved";

Jan. 9/85 - "Farm chemical testing costly".

Two years before Bhopal, a tank of chemicals exploded into flames at a Union Carbide plant in Taft, Louisiana, and 20,000 people fled poison fumes; this time from Acrolein, which is used to make animal food supplements and products which kill algae. When heated, it releases a gas which can be fatal if inhaled. You may find our 'Patient's Perspective' and 'All You Ever Wanted To Know' features even more interesting knowing that.

In case you missed it, you'll be interested in knowing the traditional medical establishment has come up with research that proves what clinical ecologists have been saying for years:

"Eczema, Food Allergies Linked" (Boston AP release published August 9, 1984)

A study conducted at Duke University Medical Centre was published in the New England Journal of Medicine. Among its findings: allergies to eggs, milk, and other foods can cause skin rashes, and the natural chemical histamine "may play an important role in these reactions"; "hypersensitivity to food must be considered as one factor in the pathogenesis of atopic dermatitis"; body cells that secrete histamine and other chemicals are key culprits in food allergies ("as they are known to be in other kinds of allergies, such as hay fever"); the most common allergy-producing foods were eggs, milk, and peanuts, but wheat, fish, beef, peas and rye could also cause reactions; other common effects were stuffy noses, diarrhea and nausea; researchers found the youngsters tested had higher-than-usual levels of histamine in their blood after eating the allergy-causing food. "It seems likely," the research group wrote, "that the intermittent (and often frequent) ingestion of specific food allergens in sensitized patients leads to the release of various mast-cell mediators, which result in cutaneous pruritus (itchy skin), and subsequently, typical eczematoid skin changes." The study was conducted by Dr. Hugh Sampson and Patricia Jolie, who studied 33 youngsters with eczema, and found that 24 of them were allergic to some foods. Bravo!

Another study published in the New England Journal of Medicine (Boston AP release published July 26, 1984) may be of great interest to those suffering the oft-discussed and debated symptomatology we know as "Cerebral Allergy".

"Manic-Depressive Disorder Linked To Body Chemical"

People who suffer the mood swings of manic-depressive disorder (also known as bipolar affective disorder) have an inherited abnormality in the way their bodies use a common chemical. A study conducted at the National Institute of Mental Health found that manic-depressive patients appear to be overly sensitive to acetylcholine, a chemical that plays a variety of roles in the body, and carries messages to the brain. Researchers said ACh may be "a factor contributing to vulnerability in a substantial proportion of patients with severe affective illness", and that a skin test can reveal people's sensitivity to it. More than a decade ago, experts theorized that depression was linked to heightened acetylcholine activity. Dr. N. Suzan Nadi's research takes us another step forward!

ECOLOGICAL ILLNESS AND THE LAW

Editor's Note: The following excerpts from Volumes 1 and 2 of the Ecological Illness Law Report (EILR), a U.S. based "independent publication dedicated to providing news and analysis on the legal aspects of ecological illness", will serve to introduce both a new feature, and a new and welcome contributor, the EILR's publisher and editor, Earon S. Davis, J.D., M.P.H., to our H&J Canada Quarterly. We are extremely grateful to Dr. Davis for his prompt and affirmative response to our request for permission to reprint ongoing excerpts from EILR, and for his kindness in providing transcripts of several publications and speeches in which he discusses "The Legal Side of Ecological Illness".

Litigation Perspectives

(c. EILR Vol. 1, No. 1, 1982)

If there is one thread that runs throughout the various legal areas interfacing with chemical susceptibility, it is the question of how the litigator should refer to this cluster of diseases. Clearly, the terms "sensitivity" and "susceptibility" are problematic in that they connote a defect within the plaintiff rather than an externally caused condition. At the same time, "ecological illness" presents too broad and unruly a disease category. That term is so global and dramatic that it will invariably be met with great skepticism. All of these terms seem to fuel the potential defenses of pre-existing condition, peculiar sensitivity, lack of foreseeability, proximate causation, intervening causation, etc.

In disability cases, the use of the above "descriptive" terms can impair your case by "flagging" it as suspicious. This is because it does not fit neatly within traditional "listings" of diseases known to cause disability. Attorneys have reported success by focusing the case on symptoms, rather than the overall nature of ecological illness. For example, if a client suffers from chronic heart or lung disease, arthritis, migraine, or psychiatric disorders, that can be confirmed by traditional physicians, there may be no need to bring in the controversy about "chemical susceptibility". The same is true of any disorder that can be confirmed by laboratory tests. I recently heard from an attorney who is using immunological lab tests to demonstrate damage caused by chemical exposures. This would be consistent with findings of clinical ecologists that a majority of their patients have abnormal T-cells, B-cells, etc.

We have had little experience with susceptibility litigation so far. The use of the litigation strategies mentioned will require a good deal of preparation, coordination with a cooperative physician, creativity, and luck. Responses and

comments on this topic are especially encouraged.

The Recognition Of Ecological Illness (EJLR Vol. 1, No. 2, 1983)

Ecological Illness is a diverse category of diseases triggered by chemicals in the human environment. As stated in the 1979 U.S. Surgeon General's Report on Health Promotion and Disease Prevention (DHEW-PHS, Pub. #79-55071, Washington, D.C., p. 105), "There is virtually no major chronic disease to which environmental factors do not contribute, directly or indirectly." In some individuals, whether due to immunological factors, allergy, and/or chronic or acute chemical toxicity, serious and disabling health effects may be triggered by the slightest of chemical exposures. Triggering agents may include tobacco smoke, formaldehyde, perfumes, solvents, pesticides, natural gas, food additives, plastics, and synthetic fabrics.

The battle to secure just compensation for the victims of toxic chemical pollution, especially those with "ecological illness", is a tough one. There generally exists a lack of legal precedent and only controversial medical information. However, due to lack of effective means of disseminating information, many positive developments that have occurred are not widely known.

Ecological illness is indirectly recognized in the International Classification of Diseases (ICD), which lists Hypersensitivity (#995.3) and toxic effects of "Other hydrocarbon gas" (#987.1) as diseases. This is "strong medicine" for the ecologically ill. Please use it and tell your colleagues. The ICD is the final word on whether a disease exists. Insurance companies and others rely upon this (U.S.) government manual. International Classification of Diseases (ICD) - Department of Health and Human Services, Publication #(PHS) 80-1260, September 1980 is available in all medical libraries and should be in most libraries. If you are unable to locate a copy, EJLR will provide copies of the relevant pages for \$2.00 to cover postage and copying expenses.

The best way to remedy the uneven flow of information relevant to ecological illness is to share information with people and publications who are major disseminators of such information.

Insurance Information Sought

EJLR, in cooperation with the Human Ecology Action League (HEAL), is seeking information on incidents where recipients of services by Clinical Ecologists are having insurance reimbursement claims denied by their insurers. Attorneys and others willing to share information in this area should write to EJLR.

We have also heard from a couple of ecologically ill persons who state that things were going along fairly well with their insurance companies until they mentioned that they were being treated by "Clinical Ecologists." Please let us know if you have any documentation of such ill will.

Industrial Biotest Convictions (c. EJLR Vol. 1, No. 6, 1983)

Most of you will remember the scandal generated when government auditors discovered that health and safety laboratory studies conducted by the largest testing laboratory in the nation had been falsified and were worthless. Science, November 4, 1983 reports that three of the four officials of the firm tried for criminal misconduct as a result of the scandal were convicted of mail fraud after a six month trial in the U.S. District Court for the Northern District of Illinois.

Many chemicals were certified as safe for use after EPA and FDA reviews based on data generated by the tainted Industrial Biotest (IBT) studies. Even now, numerous chemicals, including pesticides, are still on the market partially due to IBT tests. Of course, this is not to say that total adherence to research protocols would have provided the testing necessary to determine the safety of the substance. However, the IBT standards were so outrageous that criminal prosecutions were pursued. For example, reports indicated that records were simply "made up", that test animals were not properly marked and housed, and that some tests were actually "performed" without the use of the test animals required. Coincidentally, all of the falsified reports supported findings that the chemicals were safe.

For further information on the IBT scandal contact the National Coalition Against the Misuse of Pesticides (NCAMP) at 530 7th Street S.E., Washington, D.C., 20003, or the Northwest Coalition for Alternatives to Pesticides (NCAP) at P.O. Box 375, Eugene, Oregon, 97440.

Law Report Seeks Case Information, Expert Witnesses

Anyone involved in ecological illness litigation may be of great assistance to others if they will send copies of complaints, interrogatories, briefs, and other pleadings to the Ecological Illness Law Report. As you know, the creation of novel theories of recovery as well as the application of existing theories to novel situations can be quite difficult and time consuming. For this reason, EJLR will maintain files on all case information so that the information may be shared with others. Of course, materials will be shared only with attorneys representing plaintiffs. In addition, anyone concerned with confidentiality problems may simply black out the names, addresses, etc. for which confidentiality is required.

Co-Author Sought For "EJ" Law Publication

To the best of our knowledge, there have been no articles published on legal issues related to ecological illness. Please correct us if this is an erroneous impression. We do feel that enough material exists to prepare a fairly substantial article, whether an informal piece appropriate for a magazine such as Trial, or perhaps even a formal law review article. Anyone interested in collaborating on such a project should contact Earon Davis at EJLR.

Allergists Attack Clinical Ecology (c. EJLR Vol. 2, No. 1, 1984)

The February 1984 issue of SCS Scene, newsletter of the Society for Clinical Ecology, included a copy of the letter written by the President of the American Academy of Allergy and Immunology asking all members to write their congressmen and HCFJA in support of a proposal that would exclude food allergy tests (including those used by many clinical ecologists) from reimbursement under the medicare program. Spearheading this attack, which is getting vicious, is the Asthma and Allergy Foundation, a "patient" group funded by traditional allergists and drug companies. One source, wishing not to be quoted, felt that some allergists are angry because they are losing patients to clinical ecologists. Thus, they are attempting to lump the techniques of clinical ecology together with less proven techniques. Whatever the story, it does appear that such ill-conceived assaults may eventually result in anti-trust litigation and/or libel suits.

Controversies In Allergy? (c. EJLR Vol 2, No. 3, 1984)

Anyone involved in an ecological illness case should have a copy of the article that William J. Rea, M.D., wrote for a traditional medical journal: Rea, William J., Mitchell, Monte J., "Chemical Sensitivity and the Environment", Immunology and Allergy Practice, Sept/Oct 1982, pp. 21-31. Although this article does appear under the heading "Controversies In Allergy", it can be used to rebut any inferences of allegations that Clinical Ecology is bogus. Clearly, any new theory will be controversial, by definition. Thus, do not let traditional allergists infer that "controversial" is any indication of a lack of merit. Dr. Rea's publication will disprove that point, using the credibility of a traditional journal.

Lawyer Referral Service Comes Of Age

With almost 100 attorneys across the nation, the EJLR Lawyer Referral Service has developed into an important resource for chemical victims and attorneys. Several referrals have resulted in litigation. EJLR is in the process of asking

all ecological illness organizations to inform their members of this free service. EJLR would like to dramatically expand its referral lists. If you are, or know of, an attorney interested in receiving referrals in a particular area, please drop us a line.

Editor's Note: Ecological illness does not recognize boundaries and/or borders. Whether in states or provinces, the U.S.A. or Canada; patients, attorneys, clinical ecologists, traditional allergists, environmental groups, health officials, insurance companies, governments; indeed, anyone who lives and breathes and is affected, directly or indirectly, by allergies to "the modern world", must be made aware of our ongoing battles for recognition, compensation, treatment, and survival. The Jan/Feb 1983 edition of EJLR (Vol. 1, No. 2) comments on "The Ecologically Ill Attorney", and mentions a Canadian law student forced to withdraw from Queen's University in Kingston, Ontario, due to "EJ". In the Sept/Dec 1983 edition (Vol. 1, No. 6), the EJLR Network put out this call:

"Canadian attorneys wanted. Disabled Canadian law student seeks to contact attorneys interested in the securing of governmental benefits due to environmental disability/ecological illness. Send all responses to EJLR, P.O. Box 1739, Evanston, Illinois, 60204-1739."

It was also through the Ecological Illness Law Report's Jan/Feb 1984 edition (Vol. 2, No. 1) that this important Canadian development came to our attention:

Canadian Ombudsman Backs E.I. Claims

Under Canada's Federal system, each province administers Federal social welfare programs. Provinces also have an "ombudsman" to mediate complaints against these administrative agencies. According to Mr. Christian Nikiforuk, an EJLR subscriber, the Saskatchewan "ombudsman" has taken up the cause of the ecologically ill. In the Tenth Annual Report of The Ombudsman, January 1, 1982 through December 31, 1982, The Ombudsman addressed the E.I. problem and the failure of the Department of Social Services to respond equitably. It should be noted, however, that The Ombudsman does not have the authority to change policy, but rather to point out problems in the system and persuade officials to make appropriate changes.

In the report cited above, The Ombudsman suggested that ecologically ill individuals should receive "special needs" funding to rehabilitate their home environments so that they can return to good health. The report cites three cases in which such funds were provided. Funding was provided, through various programs,

for air filters, water purifiers, a "special diet", and the removal of synthetic and chemically contaminated items from the home environment.

X While it is unclear as to how many individuals are able to benefit from the funding programs discussed, this is definitely a major step in the right direction. In his report, The Ombudsman stated that these "...cases demonstrated unusual but severe allergy conditions and a lack of understanding of their needs by the Department of Social Services." For a copy of the relevant portion of this report, please send a stamped, self-addressed business size envelope to EGLR.

Editor's Note: Robert Burton was right, the pen is mightier than the sword; write letters, share information, cross over provincial, state and federal borders, and talk to each other. What we don't know CAN hurt us. Every bit of pertinent information we learn about helps us in our ongoing search for good health, and reaffirms the knowledge that we are NOT alone!

Major Suit Filed Against Insurance Companies And Allergists

Among the many court cases cited in Volumes 1 and 2 of the Ecological Illness Law Report, was the following (Special Combined Issue, July/October 1984, Vol. 2, Nos. 4 & 5), which is reprinted in its entirety:

A Brief History Of The Suit. On February 10, 1984, a lawsuit was filed on behalf of William J. Rea, M.D. and several other plaintiffs against the Aetna Life Insurance Company, Prudential Insurance Companies of America, and the Joint Committee on Allergies and Immunologies. The suit, filed as a set of three class actions, seeks damages under the Clayton Act and the Sherman Anti-Trust Act, tortious interference with contractual relations, breach of contract, and libel and commercial disparagement.

A "First Amended Complaint" was filed on May 2, 1984, adding the American College of Allergists (ACA) as defendants. However, by the end of July, both the American College of Allergists and the Joint Committee on Allergies and Immunologies (JCAI) were dropped from the suit. The JCAI was dismissed due to a lack of personal jurisdiction. On August 6, 1984 a "Second Amended Complaint" was filed. This complaint added the American Academy of Allergies and Immunologies (AAAI) as a defendant.

As of this printing, that is where things stand. This suit is still in the very early stages, with "Answers" filed by the two insurance companies for the original and/or first amended complaint.

Case Citation. Rea et. al. v. The American Academy of Allergies and Immunologies, Aetna Life Insurance Company, and Prudential Insurance Companies of America, CA-3-84-0219-H (U.S. Dist. Ct., N.D. Texas).

The Second Amended Complaint. As stated above, this suit seeks the certification of three classes of plaintiffs, with one class including two sub-classes, as follows:

(A). The Physician Class

(1). Physicians practicing clinical ecology whose claims for payment have been denied by defendant insurers.

(2). Physicians whose claims for payment have been denied by insurance companies other than the defendants.

(B). The Aetna Class

(C). The Prudential Class

Count One. The plaintiffs allege that AAAI conspired with Aetna and Prudential to deny insurance claims for services provided by clinical ecologists for the purpose of putting Dr. Rea and other clinical ecologists out of business, based on statements regarding the validity of clinical ecology which they knew to be untrue. Plaintiffs also allege that defendants engaged in a group boycott and that these activities represent both an illegal restraint of trade and an attempt to create

a monopoly for allergists.

As a result of these activities, plaintiff Rea seeks actual damages in excess of one million dollars in lost payments for services and lost business. The other plaintiffs, apparently "patients", seek damages to cover their unreimbursed medical payments. They also seek damages for the other members of each class.

Count Two. Plaintiffs in the Aetna and Prudential classes allege that the insurers violated their insurance contracts by refusing payment for the services of clinical ecologists and that AAAA instigated this conduct. These plaintiffs request exemplary (punitive) damages from AAAA.

Count Three. Plaintiffs seek damages for the violation of the insurers contract with them to pay their medical and hospital bills.

Count Four. Plaintiff Rea, representing the physician class(es) allege that clinical ecologists have been libeled by all three defendants and that they have been the subject of commercial disparagement. Rea seeks damages of one million dollars plus exemplary damages for the bad faith, malicious, and reckless statements.

Initial Responses of Aetna and Prudential. Each insurance company has denied the basic allegations of wrongful conduct and has raised numerous defenses. These defenses include: lack of jurisdictional amounts, statute of limitations, lack of standing, exemption from the anti-trust laws, lack of jurisdiction over counts 2-4, failure of plaintiffs to comply with claims requirements, that the proposed "class" would be impracticable, that there are numerous issues of law and fact which are not shared by class members, etc.

However, while Aetna took a conservative stand in its answer, Prudential seemed to be ready to take off its gloves, stating that "This Defendant would show that treatment by clinical ecologists is not medically necessary as defined in its various policies of insurance and, therefore, claims for reimbursement for medical or hospital expenses incurred for such treatment are not reimbursable under the policies". It also states, "... this defendant specifically denies that clinical ecology is a viable, successful, and appropriate method of treatment."

Comment. As stated above, this is a complex case in its very early stages. However, its significance is major, perhaps even regardless of the eventual outcome (and I do mean eventual). Many have complained about the failure of insurance companies to adequately reimburse for clinical ecology services, but little was

done about it until now. This suit will draw attention to the reimbursement problem, but on a larger scale, it will force some major American institutions to confront the challenge of ecological illness. The suit will force insurers and others to listen to what clinical ecologists have been saying for years. And, if the adversary process works, the American public will be the ultimate winner.

It may be interesting to note the manner in which EJLR was informed of this case. While we had heard some vague rumors of an insurance case, we were unable to confirm it through the physician plaintiffs. The only solid information emerged a few weeks ago when an EJLR reader sent in a newsletter from the American College of Allergists, which provided full-page treatment of the suit and gave us enough information to contact the Clerk of the U.S. District Court, Northern District of Texas, request a "search" to find the docket number, and finally order the relevant documents at \$.50 per page. Apparently, ACA was quite impressed with the lawsuit.

Another observation pertains to the role of insurance companies in ecological illness. One must wonder who is really paying for ecological illness. If the insurers are interested in cutting health care costs by helping us become healthier, perhaps they should consider their role in indoor-pollution-related health care (and productivity) costs, even at the price of alienating their allergist cronies. Dr. Rea has shown how clinical ecology can be tremendously more cost-effective than many "traditional" treatment approaches. It is a shame that the time and money which will be consumed by Dr. Rea's lawsuit could not have been expended in a joint pilot program to honestly test some of the results achieved by clinical ecologists. I believe that, by the time this "battle" has ended, both AAAS and the insurance companies will wish they had done so.

Editor's Note: The preceding information, and all excerpts from the Ecological Illness Law Report (EJLR) are reprinted with the kind permission and cooperation of their author, Earon S. Davis, J.D., M.P.H., Editor and Publisher, P.O. Box 1796, Evanston, Illinois, U.S.A. 60204-1796. EJLR is published six times per year, and deals with such topics as worker's compensation, toxic torts, insurance claims, indoor pollution, court opinions, pesticides; you name it, and you'll find it in the table of contents of one issue or another, along with EJLR's Lawyer Referral Service and Case Information Exchange, and news of ongoing settlements and other information pertinent to ecological illness and the environment. It's a most comprehensive and enlightening publication, and highly recommended reading!

THE PATIENT'S PERSPECTIVE

A Letter From A Mother

by Mrs. G.M. (Joy) Spearman

My daughter was ill from the day she was born, with rashes and red swollen eyes. She was always constipated, and never slept more than 10 or 15 minutes at a time. The rest of the time she spent crying.

With a baby that young, there was no question of food allergies then, so I knew it had something to do with the environment. It took me three months to discover that it was acrylic.

I went through the house and threw out everything acrylic, and wouldn't let anyone wearing acrylic near her. Her rashes cleared up right away, and her eyes became normal.

As she grew older, I realized that I still had a problem. She didn't sleep more than a few hours because every time she'd fall asleep, she'd wake up screaming with nightmares. She would also have periods of rage during the day, and would throw things or hit out at us, or just stand there and shake with rage.

One day I read a story in the Star Weekly about a family with the same problem, and they had discovered it was food additives. As you can imagine, I was to try that too, because I knew she was suffering and there was nothing to lose. I got hold of a book by Dr. Ben Feingold, and started her on the K.P. diet which eliminates all food additives and salicylates.

It was unbelievably hard at first, because there are so many things that are hidden in food. I could see an improvement within a few weeks though, so I kept on. It took two years to get it all out of her system, and her nerves to calm down enough to stop having nightmares at night. It's all worth it, because now she is a loving, calm child. I am sure that with the intensity of her rages, she would have grown up capable of murder. Now she is so different that she doesn't like fighting, and won't even hit back when another child hits her.

My biggest problem is convincing other people how serious it all is. Her teacher is one. Her kindergarten class is forever having parties and outings where food and drink is served. I have told her many times to tell me when these are coming up and I will supply my daughter with things she can have. Sometimes she remembers, and sometimes she doesn't. My daughter is pretty good about refusing things she's not supposed to have, but sometimes it's too tempting. I can tell within a few hours when she has things she shouldn't have.

Another of my problems is the clothing worn by other children. In the winter especially, with acrylic mitts, hats, and fake fur trim on coats. I feel I spend half my time reading labels in grocery stores and clothing stores. It's even hard to find pure knitting wool to make her hats and mitts with. It's almost impossible to find her a snowsuit for winter.

I feel I've been lucky to discover her problems early so that she'll be able to have a healthier life. I have a real grudge against doctors now though, because they have been no help at all, and they have made me feel that I was crazy. I found that if I went into an office and told them my daughter had an acrylic allergy, and asked if there was anything that would help, they would get really hostile. I think they would rather you didn't know what was the matter and they could spend years looking.

Another thing that has surprised me, is the reactions of other people with hyperactive children. Some of my friends have mentioned to other people who have hyperactive children, the change they have seen in my daughter, and suggested that they talk to me. So far none of them have bothered. I would have thought that living with a hyperactive child, they would be willing to try anything to get relief, because it's not only hard on the child, but very hard on the family too. Just ask me! I didn't get a full night's sleep for 3½ years. Besides, the wear and tear on your nerves knowing that your child is very sick and not knowing what to do about it ...

I would be only too happy to try to help other people by telling them about my daughter. It is such a relief talking to someone who understands, to know that I'm not alone. If you find time in the future, I would like to know how you manage your allergies when you go out.

Once they are identified they are easy to manage at home, but how do you manage to live a normal life and have contact with other people without getting ill again?

Readers Are Invited To Respond

Editor's Note: In 1982, when Mrs. Spearman first suggested to her doctor that her daughter had an acrylic allergy, the doctor said "It's impossible to be allergic to acrylic!" For doctors who are still of that mind, I suggest a quick look at page 1604 (Principles of Toxicology: Allergic Reactions) of 'Goodman and Gilman's The Pharmacological Basis of Therapeutics, Sixth Edition (c) 1980.

EVERYTHING YOU EVER WANTED TO KNOW

What is acrylic, and why do they call it "A Miracle Fiber"?

Acrlan is a trademark. Orlon, Acrylic, Borg Pile, and "Fantasy Furs" are true acrylic fibers, which means they contain 85% or more of the chemical acrylonitrile. Modacrylic fibers (trademarks include Dynel, Teklan, Verel, Kanekalon) contain only 35% to 85% acrylonitrile. Wigs are often made out of modacrylic fibers, because hair is too expensive.

Acrolein is a yellow, flammable liquid, $\text{CH}_2(\text{HCHO})$, having a stifling odor. Olefin, Propylene, Ethylene, are all related. It is usually obtained by the decomposition of glycerol, and is used chiefly in the synthesis of commercial and pharmaceutical products. It is also called acraldehyde, acryldehyde, acrylic aldehyde (root is Latin: *acr* = sharp + *ole* (re) to smell). It does smell "sharp" (acid would be a better descriptive word).

Acrylate is the salt or ester of an acrylic acid (a colorless, corrosive liquid having an acid odor, usually derived from acrolein by oxidation; used especially in the synthesis of acrylic resins, e.g. Lucite and Plexiglass (which are trademarks). Among the catalysts used in processing are cyanide, cuprous chloride (acid) and hydrogen cyanide.

Acrylic Fibers are any of a group of synthetic fibers, e.g. orlon, made by the polymerization (polymer, n. compound of high molecular weight derived by the addition of many smaller molecules of the same kind; polymeric, polymerize, polymerization) of acrylonitrile as the principal component, with one or more other monomers (n. a molecule capable of reacting with other molecules to form a polymer). By definition, acrylic fibers contain at least 85% acrylonitrile.

Monosodium Glutamate (MSG) is often produced from acrylonitrile. One of the bases for acrylonitrile (a petrochemical) is acetylene, a colorless gas, $\text{HC}\equiv\text{CH}$, having an ether-like odor. Acetylene is also the base for polyvinylchloride (PVC), cellulose acetate, and polyvinyl acetate.

Acrylonitrile is a colorless, flammable, poisonous liquid used chiefly in the polymerization or copolymerization (the conversion of one compound into another) of rubber, textile fibers and plastics. It is corrosive, caustic and toxic; a flammable, poisonous liquid; suspected carcinogenic; suspected chemically unstable; catalyzed by acid or cyanide; poorly (and possibly fraudulently: see our 'Ecological Illness And The Law' feature, Industrial Biotest Convictions, and a list elsewhere in this edition) tested and listed on a 1977 EPA (Environ-

mental Agency, U.S.) chemical list studied during congressional hearings.

According to a list of the principal neurotoxins (poisonous to nervous system, especially brain and spinal cord) used in industry, compiled by the National Institute for Occupational Safety and Health in the United States; yet another related substance; Acrylamide, a polymer converted from acrylonitrile, was first reported to be a neurotoxin in 1966, almost two decades ago. Used in chemical manufacturing, its main effect was listed as "nerve damage in hands and feet".

Acrylonitrile was first manufactured commercially during the '30s, and although it was initially made from acetylene (produced from methane, naphtha, crude oils, or even coal particles), by the '60s, propylene was the favoured chemical base. Propylene is a by-product recovered in the catalytic cracking of gas oils to gasoline. It is widely used for carpet underpadding, furniture, carpetting (esp. indoor-outdoor), and even clothing.

Acrylonitrile is used with other vinyl and acrylic monomers, such as vinyl acetate or acrylamide. Because acrylic fibers can be textured to resemble wool, the fibers have their main outlets in knitwear, carpets and upholstery. There is an increased use of acrylic in woven goods as well. It is blended with silk, wool, rayon, polyester and/or cotton, and turns up in nightwear, socks, jogging suits and "cotton lookalikes". Even 2% acrylic content can cause symptoms in the sensitive. It often appears within the innocuous phrase "other fibers".

Modacrylic fibers were originally developed to raise the softening point and facilitate spinning from "common solvents" of PVC fibers (PVC=polyvinyl chloride; think about lawn chairs and the hot summer sun, or chemical spills on railroad tracks that prompt residents to evacuate their homes). They are used as "flame retardent fibers", alone or with other blended fibers. Modacrylic fibers are usually weaker and more easily dissolved than the "true" acrylics.

The introduction of acrylic fibers into the textile market during the early '50s "has resulted in a significant demand" for acrylonitrile, which is also used for oil-resistant rubber and resins; stimulated by a "dramatic decrease in the cost of production over the years, as techniques have improved". In other words, it's cheaper to make now, and so acrylic fibers have proliferated to a dizzying degree; mainly due to the "long life and hard wearing" properties, and the "new, improved processes" that have greatly "enhanced the dyeability" of the products. From 1970 to 1972, for example, the increase in fiber output was almost 600 million pounds over two years. 600,000,000 pounds become insignificant when we consider the staggering increases in the decade and more since then.

Editor's Note: The following sources were used in assembling information on "the deadly acrylic" for the H&F Canada Quarterly:

'Basic Organic Chemistry' Part 5 - Industrial Products, by Tedder/Nechvatal/Jubb, published by John Wiley & Sons (c) 1975, reprinted 1976, 1977, 1979, in Great Britain. It was ordered through a University Book Store in Winnipeg, and so should be relatively available.

'The Random House Dictionary', unabridged edition; a curious mind's best friend, has never failed to clarify a technical term ... invaluable!

'Neurotoxic Follies' by Alan Anderson, published in 'Psychology Today', July 1982, and featured in the H&F Canada Quarterly Vol. VI, No. 1 (March 1984).

'The Illusion Of Safety', "An Investigative Project of the Foundation for National Progress and the Center for Investigative Reporting"; was published in the U.S. magazine 'Mother Jones', date and subscription address unknown.

A Final Comment: One of my most severe and debilitating reactions was caused by latex paint in which acrylic was an unlisted ingredient. Canadian labelling laws lag far behind those in the United States, and manufacturers "are not required to" list acrylic or any other "useful chemical", according to what I've been told by paint suppliers. Another severe physical and cerebral reaction resulted from a visit to a friend's house several hours after she'd used self-polishing acrylic floor wax in her kitchen. Devastating in its fiber form, this man-made-"miracle" substance is deadly in its liquid form. Despite claims to the contrary, acrylic does not dry (other than to the "touch") in hours or minutes. According to both an industrial polymer chemist, and a professor teaching chemistry at the U. of M. (with whom we consulted during my acrylic paint crisis); acrylic is most toxic when wet, because the molecules are "free" and unstable, emitting fumes until it is entirely sealed. In paint, the colour pigment binds to the acrylic molecule over a period of 6 to 8 days before it hardens to a virtually indestructible (*) substance. Think about "Wear-Dated" and "Lifetime Warranties" on fabric labels. The next time you go shopping, read the labels on the wonderfully coloured and textured chesterfields, loveseats and chairs in your favourite furniture store; paying special attention to the "velvet" fabrics. Odds are, most of them will be 100% acrylic. When my husband and I visited our local Greyhound Bus Terminal office, we were told that all Greyhound busses are upholstered in acrylic. We were also told that allergic patients are advised to wear face masks when riding the busses, so it is not an unknown problem. (*) Answer to why acrylic is thought of as a "miracle fiber". It's a miracle we're surviving it in our environment!

KNOW YOUR BODY

Editor's Note: What does it mean when your physician says "You have a chemical imbalance", or a "hormone imbalance"; a "malfunctioning hypothalamus"; a "hyper-" or "hypoactive thyroid"; an "auto-immune disorder" or an "illness of unknown etiology"? Do you know where your adrenal glands are? What your sympathetic (or parasympathetic) nervous system is or does? Where your central nervous system (CNS) or motor control centers are? What is your body all about? What makes it work? How are your brain signals transmitted to various parts of your body? If you don't know, you should. "Monopoly of knowledge confers power", 'tis said, and ecological illness leaves us powerless enough in the face of a medical practitioner's mysterious diagnosis. Physiology and neuroendocrinology can be fun! (Caution: Learning to know your body can become addictive.

The Nervous System

The nervous (organ) system regulates and coordinates many body activities; detects changes in the internal and external environments; is responsible for states of consciousness; and includes the brain, spinal cord, peripheral nerves and ganglia, and special sense organs.

The central nervous system (CNS) consists of the brain and spinal cord. The peripheral nervous system consists of the nerve fibers extending from the brain and spinal cord, and is divided into afferent (incoming) and efferent (outgoing) control mechanisms.

The afferent neurons' peripheral endings have receptors which respond to physical or chemical environmental changes; generate action potentials in afferent neurons, and carry information into the brain or spinal cord. After transmission into the CNS, some afferent information may be perceived as a conscious sensation.

Efferent (outgoing) neurons transmit the final integrated information from the CNS, out to the effector organs (muscles or glands). Efferent neurons which innervate skeletal muscles are also called motor neurons.

The efferent division of the peripheral nervous system subdivides into (a) somatic and (b) autonomic nervous systems. The somatic division innervates skeletal muscles and all fibers going from the CNS to skeletal muscle cells. The transmitter substance released by these neurons is acetylcholine (ACh). Activity of somatic efferent neurons (nerves) causes contraction of the innervated skeletal muscle cells; there are no inhibitory somatic motor neurons.

The autonomic division is self-controlling; innervates smooth and cardiac

muscles and glands, and is further divided into sympathetic (thoracolumbar) and parasympathetic (craniosacral) nervous systems. The two divisions of the autonomic nervous system are located in different areas of the CNS, and their nerve fibers leave at different levels; sympathetic from the thoracic and lumbar regions of the spinal cord, and parasympathetic from the brain and sacral portion of the spinal cord. All the spinal nerves and some of the cranial nerves contain processes of both afferent and efferent neurons.

The peripheral nervous system consists of 43 pairs of nerves; 12 pairs (cranial nerves) connect with the brain, and 31 pairs (spinal nerves) connect with the spinal cord. The cell bodies of afferent (incoming) neurons are in structures called ganglia (aggregations of cells) which are outside but close to the brain or spinal cord. They are the first cells entering the CNS in the synaptically linked chains of neurons (sensory nerves/primary afferents) which handle incoming information.

Only about 10% of the cells in the nervous system are neurons; the remainder are glial cells (neuroglia: the supporting structure of the brain and spinal cord) which physically support and metabolically sustain the neurons.

Neurons communicate with one another through the actions of neurotransmitters; chemical agents released by one nerve cell which act upon a second neuron (or upon a muscle or gland cell), altering its electrical state or activity. The passage-way between neurons is called a synapse, hence "synaptically linked chains of neurons". Neurotransmitters relay messages to effectors (cell or cell collections, specifically muscle and gland cells), and change their activity. Everything that happens in your body, happens in response to a neural or hormonal signal, and whether secreted by endocrine glands or released from neuronal endings, chemicals constitute the ultimate messages by which your body is told to alter its activity. Let's look at a few examples:

Acetylcholine (ACh) is the transmitter for only a few pathways in the brain and spinal cord, but it is an important synaptic transmitter in the autonomic nervous system, and is the transmitter at the junction between motor nerve terminals and skeletal muscle cells. It is released by parasympathetic nerve fibers.

Dopamine is a catecholamine neurotransmitter (a precursor of epinephrine and norepinephrine) that is hypothesized to cause schizophrenia due to excessive activity of dopamine-mediated synapses, especially in the limbic system.

The thyroid gland secretes hormones which control a number of metabolic processes, including the maintenance of body temperature and weight, control of skin texture, stimulation of protein catabolism, and proper functioning of the CNS.

At the tissue level, the actions of thyroid hormone are synergistic with those of epinephrine. A paired endocrine gland located in the neck, the thyroid functions to increase the metabolic rate of most cells in the body.

A given chemical messenger may be synthesized by a number of different cell types to serve as a neurotransmitter (released from neuron terminals), as a hormone (released from endocrine glands), and as a paracrine agent. For example, epinephrine functions both as a hormone and as a neurotransmitter; estrogen is both a hormone and a paracrine. One of the best known paracrine agents is histamine. In homeostasis, the physical and chemical composition of the internal environment of the body is relatively stable, a result of the actions of compensating regulatory systems. The homeostatic control system consists of interconnected components, each dependent upon a chemical messenger, or messengers.

If the body chemicals are out of balance (e.g. dopamine and acetylcholine), the body malfunctions; its messages are confused; its cell functions altered, sometimes beyond repair. Each body function is dependent on another for its wellbeing. Afferent or efferent, the messages must be clear and precise.

Think of the efferent (outgoing) autonomic nervous system, with its sympathetic and parasympathetic functions, as the "fine tuning" mechanism that helps to regulate the day-to-day activities of your body. Remember that somatic means "pertaining to the body; related to the framework or outer walls of the body, including skin, skeletal muscles, tendons and joints" (e.g. the musculoskeletal system). Now that you have a basic understanding of the nervous system, expressions like "a bad case of nerves", or "of nervous origin" take on a whole new meaning.

The nervous system and the endocrine system function as a single inter-related system. The CNS (particularly the hypothalamus) plays a crucial role in controlling hormone secretion, and conversely, hormones markedly alter neural functions and strongly influence many types of behaviour in the body and brain. These interrelationships are known as the study of neuroendocrinology.

Hormonal Control Mechanisms

A hormone is defined as a chemical substance synthesized by an endocrine gland and secreted into the blood, which carries it to other sites in the body where its actions are exerted.

Only certain cells are capable of responding to hormones, and they're known as target cells. Specialization of target-cell receptors explains the specificity of action of hormones; they need not cause an alternation of their own receptors only, they may also affect receptors for other hormones.

One hormone, epinephrine, is actually a product of the sympathetic nervous system. The control mechanisms for many of the hormones involve the direct or indirect participation of the hypothalamus and pituitary. The hypothalamus exerts important control over the autonomic nervous system, including the adrenal medulla (situated on top of your kidneys; medulla + cortex = adrenal glands).

Let's take a closer look at the hypothalamus: a structure at the base of the brain containing centers for sleep, temperature, thirst, hunger, emotion, sexual activity, and other autonomic functions; it performs its primary function of adjusting the environment of an organism by receiving impulses from the cerebral cortex, and sending messages to the spinal cord and the centers for respiration, heartbeat, and glandular regulation in the medulla, or soft marrowlike center of an organ. It also controls certain activities of the nearby pituitary gland, through which it governs endocrine secretions throughout the body.

The hypothalamus has been called "the seat of emotion"; the principal center in which the various components of emotional reaction are organized into different patterns, including rage responses. Direct electrical stimulation of the hypothalamus will produce many emotional reactions, including fear, anxiety, irritation, attack, and curiosity. There is indication that the lateral area is associated with attack, the anterior with fear, the middle with aggressive behaviour, the posterior with curiosity and alertness.

The hypothalamus is particularly related to the physiological response to stress; the correlation of neural and endocrine function; the integration of the CNS and the hormonal system. It is responsive to the feedback of circulating hormone levels; high hormone levels shut off the releasing mechanisms, and low hormone levels stimulate the releasing mechanisms. (Hormone secretion usually follows a diurnal pattern over 24 hours, being highest in the morning.)

The hypothalamus is part of the Limbic System. Its neurons are affected by a variety of hormones and other circulating chemicals.

The Limbic System

Concerned with emotional behaviour and learning, the limbic system is an interconnected group of brain structures within the cerebrum, including the hypothalamus, portions of the frontal lobe cortex, temporal lobe, and thalamus, as well as the circuitous neuron pathways connecting all parts. Besides being connected with each other, the parts of the limbic system have connections with many other parts of the CNS. Activity of the limbic system can result in a wide variety of automatic responses and body movements (e.g. sweating, blushing, heart rate changes,

and somatic responses such as laughing and sobbing).

Sometimes called the visceral brain, the structures of the limbic system act in a complex, concerted manner to integrate emotional state with motor and visceral (pertaining to any large interior organ in any of the four great body cavities, especially those in the abdomen) activities.

The basal ganglia form an essential segment of the extrapyramidal motor system (multineuronal pathways), which complements the function of the pyramidal (corticospinal pathway) or voluntary motor system. (Damage to the extrapyramidal system results in inhibition of voluntary movements and the appearance of such disorders as parkinsonism.)

The thalamus lies in the center of the brain, beneath the cortex and basal ganglia, and above the hypothalamus. Its nuclei act as relays between the incoming sensory pathways and the cortex; between the thalamus and the hypothalamus, and between the basal ganglia and the association areas of the cerebral cortex. The thalamus is a subdivision of the diencephalon that is a waystation and integrating center for all sensory (except smell) input on its way to cerebral cortex sites. It also contains motor nuclei and a central core which functions as an extension of the brainstem reticular formation.

As you can see; the limbic system, the hormonal system, the chemical balance in your body, the nervous system, the motor control centers and so many other processes in your body are interrelated. The whole is the sum of all of its parts, and if one part (e.g. the thyroid, the immune system) malfunctions, many other parts will be unable to perform their functions.

System by system, part by part, day by day; the ecologically ill are urged to KNOW their bodies; LEARN! Etiology is the science dealing with causes of disease; "illness of unknown etiology" means the doctors often don't know either, and so we have "the blind leading the blind" through a myriad of treatments and tests, most of them involving pharmaceutical chemicals designed to alter the functions of neurotransmitters and hormonal control mechanisms.

Asthmatics Take Note: Airways are constricted (increased mucous secretion) by parasympathetic nerves and histamine; dilated by sympathetic nerves and epinephrine (adrenalin). Nervous regulation of airway size is mediated by the autonomic nervous system; the sympathetic neurons cause relaxation of smooth muscle and decreased resistance; the parasympathetic neurons cause smooth muscle contraction and increased resistance. Painful stimuli anywhere in the body can produce reflex stimulation of the respiratory neurons. So can emotional states.

SOMETHING TO THINK ABOUT

Data from the National Institute for Occupational Safety and Health (U.S.A.) reveals the first reports of neurotoxicity related to polyurethane foam production were made in 1977. Workers reported impotence (in men); lack of urination control; tingling in hands and feet, as their major "reactions". Polyurethane foam is used in foam pillows, car and furniture upholstery; rigid foams are used for insulation, solid elastomers, or surface coatings. Polyurethanes come in two main groups: polyethers and polyesters, and may be thermoplastics, rubbers or thermosets. In 1983 a polyurethane foam device was approved for use as a contraceptive vaginal sponge! What you don't know CAN hurt you!

JAMPAX (trademark) Regular (original) Tampons are made of 100% cotton. Most others are not, and can cause great difficulty to the synthetic fabric sensitive.

Information from 1977 congressional hearings and EPA chemical lists in the United States reveal Industrial Bio-Test Laboratories (IBT), which performed more than 22,000 chemical safety tests in the U.S.A., falsified evidence on at least 80% of some 900 tests examined by the U.S. Government. (See 'Ecological Illness And The Law' in this issue.) Among the consumer products approved for marketing as a direct result of questionable testing information provided to the Food and Drug Administration (FDA) prior to 1976, are the following: the pesticides Captan and Orthene (Chevron), and 2,4-D (Dow); anti-algae swimming pool chemicals containing Isocyanurates; Hartz 2-in-1 collars and flea powders containing carbaryl; deodorant soaps (e.g. Dial) containing triclocarban (TCC); various pharmaceutical preparations, including Fastech Denture Adhesive and a drug (nonsteroid anti-inflammatory) used to control pain and inflammation of joints and muscles (arthritis, menstrual cramps, dental surgery, etc.); insulation and flooring containing formaldehyde, and acrylic fibers containing acrylonitrile.

Auto-Immune Disorder is a disease produced by antibodies or T-cells (lymphocytes arising in spleen, lymph nodes or other lymphoid tissues from precursors that at one time were in the thymus. In some way they acquire the ability to differentiate and mature into cells acting as effectors in cell-mediated immunity, sensitized against the bodies own cells, which results in damage or alteration of cell function. It is also known as Immune System Dysregulation, and recurrently turns up in the diagnosis of environmental or ecological illness and chemical sensitivity.

INDUSTRIAL PRODUCTS

Editor's Note: How often have you heard a government epidemiologist or an industry spokesman for one chemical or another say "It's so safe, you can drink it!" Have you ever seen one do it? This new feature could (appropriately) be subtitled What You Should Know About Environmental Chemicals And Their Relationship To Your Health; in it, we will discuss such topics as pharmaceuticals, basic organic chemistry, and pesticides (a subject of growing concern to the ecologically ill). Beginning with this issue, your H&E Quarterly is happy to welcome Douglas S. Steinke, BSc. (Envirochem), as a regular contributor. Doug is an H&E member who is currently studying Pharmacy III, and as such, is well-informed about the latest developments in environmental chemistry research. His first submission, 'An Introduction To Organophosphate Pesticides', begins with these 'Physiology Notes':

Acetylcholine (see Know Your Body): ACh is a chemical transmitter released from many peripheral nerve endings (e.g. from postganglionic parasympathetic fibers and at neuromuscular junctions, and from the postganglionic sympathetic terminals of some sweat glands), and from some* neurons in the CNS. The post-synaptic peripheral receptors, and the CNS receptors of importance* are called Muscarinic. In the preganglionic terminals (both parasympathetic and sympathetic), and in the motoneurons (lower motor) of the skeletal muscle endplates, the post-synaptic receptors are Nicotinic.

Acetylcholinesterase: is an enzyme that breaks ACh down into acetic acid and choline; located near the acetylcholine receptors on the postsynaptic membrane, the function of AChE is to terminate the action of ACh at the junction of the various cholinergic nerve endings with their effector organs or postsynaptic sites. Chemicals that inhibit AChE are called anti-ChE (anticholinesterase) agents. They cause ACh to accumulate at cholinergic receptor sites and thus are potentially capable of producing effects equivalent to excessive stimulation of cholinergic receptors throughout the peripheral and central nervous systems. (Cholinergic: pertaining to a nerve fiber that releases acetylcholine; a compound that acts like ACh).

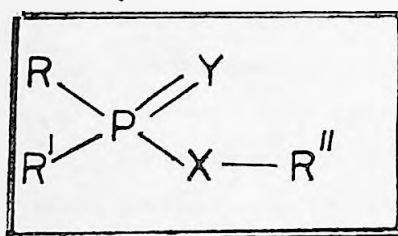
Anticholinesterase Agents: can be absorbed through skin, lungs and the GI (gastrointestinal) tract. Toxic effects are both (1) peripheral and (2) central. (1) Muscarinic (increased bronchial secretions, bronchoconstriction, diarrhea) and nicotinic (muscular fasciculation and neuromuscular paralysis due to depolarizing block) are the commonly experienced peripheral effects. (2) Central effects lead to respiratory depression, convulsion and coma.

Organophosphates: are anticholinesterases; irreversible, non-equilibrium antagonists; long acting inhibitors that form a stable covalent bond with the AChE enzyme after about an hour (alkyl phosphorylation), at which time the bond becomes irreversible. More than 50,000 compounds (belonging to this group) have been synthesized. Some have a very high vapor pressure and are extremely toxic nerve gasses; the most potent synthetic toxic substances known. Others have a low vapor pressure, and are extensively used as insecticides. With some organophosphates (e.g. Parathion but not Malathion), long term toxicity involving demyelination of nerves has been reported in agricultural workers. AntiAChE agents as a group, have extensive application as toxic agents, in the form of agricultural insecticides (e.g. Malathion) and potential chemical warfare 'nerve gasses'.

Organophosphate Pesticides - Part One by Douglas J. Steinke, BSc. (Envirochem)

In today's society there is widespread use of pesticides; chemicals designed to check the attacks of various pests on agricultural and horticultural crops. They are classed depending on the particular use intended (e.g. insecticides if insects are the target organisms, herbicides if killing weeds or other unwanted vegetation is desired; rodenticides if ridding vertebrate pests such as rats, mice or gophers is necessary), as well as many other classifications.

Unfortunately, very few pesticides are specific for only the intended pest. There seems to be an overlapping of effects of these compounds into other ecological systems. It is the intent of this article to present the way in which pesticides belonging to the class of organophosphorous (OP) chemicals affect humans and other mammals. The OP pesticides are one of the largest groups of pesticides currently in use.



R and R' usually short chain hydrocarbon or hydrocarbon and oxygen groups;
 X, Y usually either sulfur (S) or oxygen (O);
 R'' - X usually the group that is metabolized by the insect.

Figure 1:

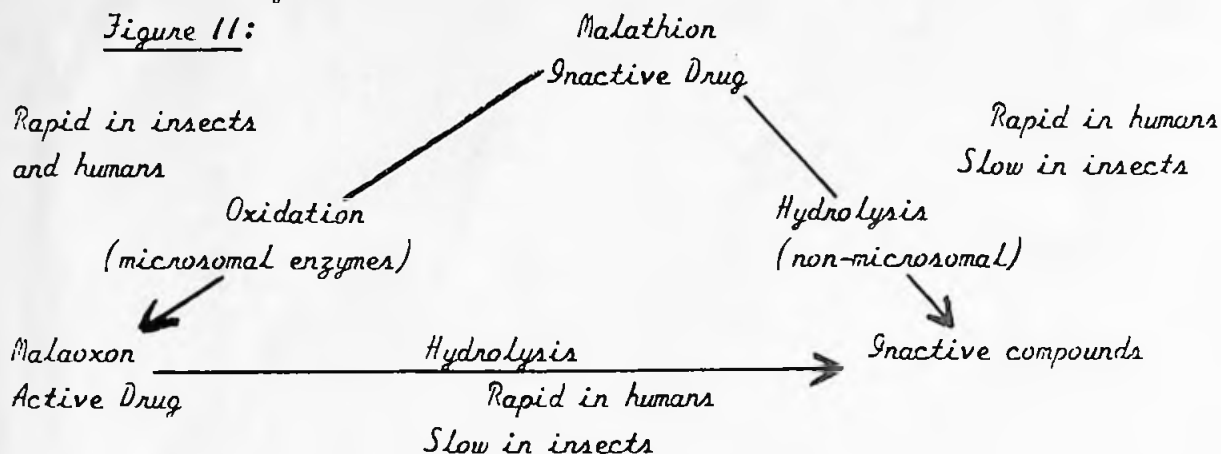
OP Pesticides

This group of compounds includes such "common" insecticides as parathion, malathion, phorate and diazinon. The biologically active compounds of the OP class of pesticides are denoted by the general formula as depicted in Figure 1.

The toxicity values of the OP pesticides range from high toxicity for parathion to low toxicity in the case of malathion. It should be mentioned at this point that OP pesticides, in general, are dispensed for use in their inactive form.

In this way they can be absorbed into the body through the skin (dermally); through the mouth (orally) or through inhalation of vapors. Toxicities of these compounds arise after absorption into the body has occurred by what is termed "biotransformation". Basically, biotransformation is a chemical conversion from an inactive chemical for to an active one by naturally occurring substances in the body, as is illustrated in Figure 11.

Figure 11:



As you can see in Figure 11, malathion is not the actual culprit of toxic effects; malaoxon is its active biotransformation product.

The range of toxicities is next determined by what scientists refer to as "drug-receptor binding". As can be seen in Figure 111 (a) (b) and (c), drug-receptor binding is analogous to a lock and key. The greatest toxic effects will result when the chemical structure of the substance matches identically to its own 'lock'.

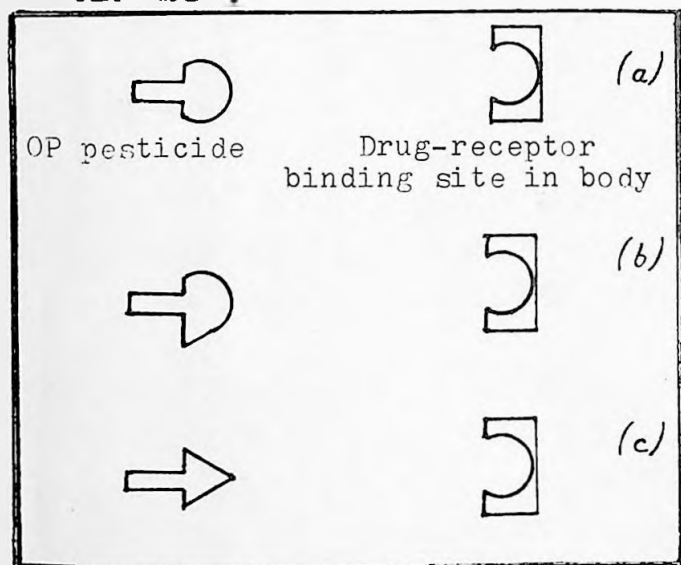
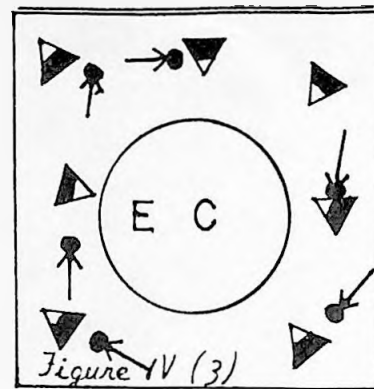
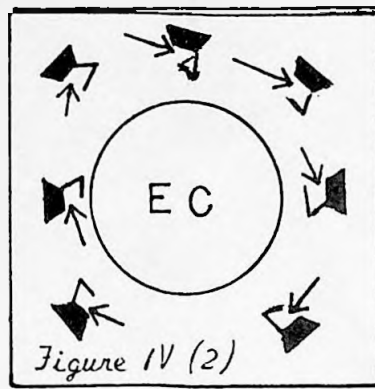
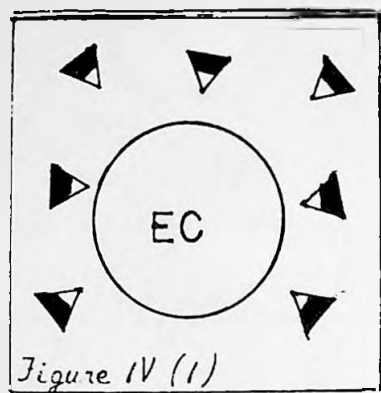





Figure 111: Biological Response

- (a) degree of fit is perfect; highest biological response.
- (b) degree of fit moderate, since key doesn't have exact shape of receptor; moderate biological response, i.e. some fit.
- (c) degree of fit poor; low biological response.

For OP pesticides, their lock is located on a chemical found in blood called AChE or acetylcholinesterase, the enzyme discussed in 'Physiology Notes' on page 37.

AChE is an enzyme which is necessary for proper nerve function in most vertebrates including humans. It is because OP's affect on poison AChE that they are often referred to as anticholinesterase (antiChE) compounds. The simplified schematic depicted in Figure IV illustrates the physiological functioning of a normal nerve cell as well as the occurrences in an OP poisoned nerve cell.



- (1) ACh  liberated by nerve impulses, acts directly upon effector cells (EC) to produce their responses.
- (2) AChE \rightarrow terminates the response by hydrolysing ACh .
- (3) Phosphate ester compounds attach a phosphoryl group  to AChE, and thus render the enzyme nonfunctional.

Conclusion

The signs and symptoms resulting from OP poisoning are quite well known. When AChE becomes toxic, nerve impulse transmissions in the body become uncontrollable because of the buildup of acetylcholine (ACh) at the ends of nerve fibers. Early symptoms of OP toxicity include watery eyes, pin-point eye pupils, headache, nervousness, blurred vision, dizziness, weakness, nausea, cramps, diarrhea and chest discomfort. Advanced symptoms include excessive sweating and salivation, rapid heart beat, excessive respiratory secretions, vomiting and convulsions.

Failure of the respiratory and cardiovascular centers are the ultimate causes of death resulting from OP poisoning. Death is due to respiratory failure, both peripheral and central.

The effects of OP pesticides on the body are similar to many conditions like hayfever, but may progress to something more serious. Handling of OP compounds should be carried out in the same way you handle drugs (i.e. With Extreme Caution), for they are fatal, not only to insects but also to humans.

In the next Quarterly (June) we will discuss specific organophosphates in depth, beginning with Malathion; an insecticide of particular interest to Manitobans.

Editor's Note: In recent years, reversible carbamate anticholinesterases have become popular as insecticides. These compounds include Carbaryl (Sevin: the trademark of Union Carbide's insecticide processed from methyl isocyanate gas), and Propoxur (Baygon). Carbaryl is widely used on vegetable crops in Manitoba; Propoxur is used (along with Malathion) to kill mosquitoes. What you don't know (AW hurt you!) In future editions of your H&E Quarterly, our resident environmental chemist, Doug Steinke, will take a good look at carbamates, and report his findings in the 'Industrial Products' column.

Coming Up In The Next Edition:

"Ecological Illness: Maladaptation To The Environment"

A discussion article published by the Environmental Health Center in Dallas, Texas, and written by Dr. Robert M. Stroud (allergy, immunology and rheumatology); Dr. Ralph E. Smiley (allergy and environmental diseases); Dr. Donald E. Sprague (family practise, aviation medical examiner, allergy and environmental diseases), and Dr. William J. Rea (thoracic and cardiovascular surgery).

"The Future Of Formaldehyde In An Increasingly Contaminated World"

A speech presented to the consumer-industry-government forum on The Future Of Formaldehyde In Consumer Products, on Friday, November 16, 1984 at the Washington Plaza Hotel in Washington, D.C., by Earon S. Davis, J.D., M.P.H., an environmental consultant, attorney and project coordinator, and former national executive director of the Human Ecology Action League (HEAL). Dr. Davis is the publisher and editor of the Ecological Illness Law Report.

Allergy Workshop: Diagnosing Fabric Allergies

Editorial: "Allergy: Fact or Fantasy"

Publications Available From H&E Canada

Suggested Reading Lists

A Review of "An Alternative Approach To Allergies" by Dr. Theron Randolph and Dr. Ralph Moss, including a discussion of Dr. Randolph's Stimulatory/Withdrawal Chart and the Allergic Tension/Fatigue Syndrome. Stay (at)tuned!

The Human Ecology Foundation of Canada Invites New Members:

If you'd like to join H.E.F. Canada, please fill in this form and send it to your nearest branch office. Although all current "official" branches are in the province of Ontario; we have interested groups in the whole world. We Are Everywhere!

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I am enclosing a _____ cheque _____ money order (Canadian Funds in Canada, or U.S.A.) for \$20.00 (twenty dollars) to cover one year's membership, four editions of the H&F Canada Quarterly, and regular Branch Newletters. What A Bargain! I want to get involved in saving our Endangered Species.

(Optional) In addition, I am enclosing a donation of \$ _____ to further the purposes of The Foundation. All donations are tax-deductible as charitable donations.

PLEASE NOTE: H.E.F. Canada does not make its mailing list available to commercial sources or members of the public, but if you'd like your name to be given to an H&F member seeking contact with others in your area, tell us. New Branches Are Welcomed Too. Further details are available from H&F Canada's Head Office.